



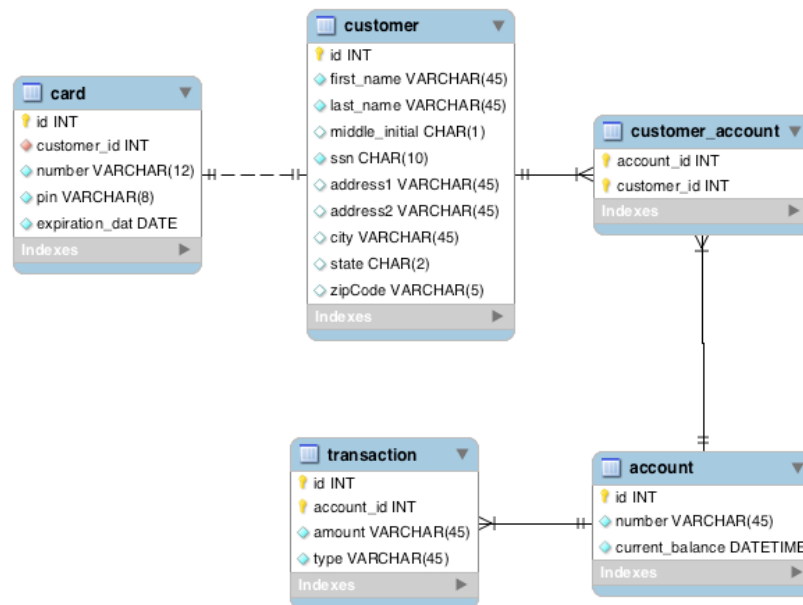
# Hibernate Assignment

## DePaul ATM Enterprises

In an effort to raise money for student scholarships, DePaul has decided to go into the automated teller (ATM) business. The architect for the project has decided that Hibernate is the best option for persistence given it's strength in persistent features, costs and ease of finding developers for the project. You have been assigned to develop the persistence layer for the project. Below are the specifications.

## Data model

The data model for the project is stated below:



- Fields with a yellow key icon are the primary key field for the table.
- Fields with a pink diamond next to them are foreign keys back to the table they reference (**customer\_id** is a foreign key back to the customer table, etc).
- Fields with a blue diamond next to them are not nullable.
- Fields with a white diamond next to them are nullable.

## Data access object

The final version of the persistence layer for the ATM will consist of the following:

- A single Data Access Object with the following methods
  - Customer `getCustomerByCard(Card card)`. This should take a card object and look up a customer by card number, pin and expiration date.
  - void `saveTransaction(Transaction trans)`. This method should save a single transaction object.
  - double `getCurrentBalance(String accountNumber)`. This method will return the current balance of the account based on the account number provided.
- A single service object that implements the interface provided.

## Design considerations

When designing a system like this, there are a number of things to consider. Your solution should be able to handle the following considerations.

- Accounts can have thousands of transactions which loading into memory every time an account or customer is loaded will not be performant.
- The ATMs will be clients to a central server where the persistence layer will be running. Since multiple cards can access the same accounts (One card has one customer but multiple customers can have the same account) concurrency should be addressed.
- Feel free to add any fields you need to, however the fields above are the minimum you are required to use.

## Deliverables

For this assignment you are expected to deliver a zip file of a maven project that contains the source code for a single data access object called `AtmDao` implementing the above required methods as well as the implementation of the `AtmService` interface. The project should also have all hibernate configuration and mapping files required. A driver class I write will be used to test the service you write.